

Appl. No. 10/716,309
Arndt, dated March 6, 2006
Reply to Office Action of September 6, 2005

PATENT

REMARKS

Claims 1-26 are currently pending in the present office action. The Applicants have amended the specification and claims 1, 9, 12, and 14, and added new claims 27, 28, and 29 to the application. No new matter has been added.

In summary of the present office action, the Examiner has:

- I. Objected to the specification and claims;
- II. Rejected claims 9, 12, and 14-26 under 35 U.S.C. §112; and
- III. Rejected claims 1-26 under 35 U.S.C. §103(a).

I. Objections to the specification and claims.

The Examiner has objected to informalities in the specification and claims. The Applicants have amended the specification and claims accordingly and respectfully request the withdrawal of these objections.

II. Rejection of claims 9, 12, and 14-26 under 35 U.S.C. §112.

The Examiner has rejected claims 14-26 under 35 U.S.C. §112(1) as failing to meet the enablement requirement with respect to the term "code." The Applicants have amended these claims to replace the term "code" with the term "computer program instructions." The Applicants respectfully submit that the term "computer program instructions" is fully enabled by the specification.

For example, Figure 7 discloses an exemplary digital system 700, within which the present invention can be embodied. Digital system 700 includes a processing unit 702, which can "direct data to an appropriate system component for processing or storage, execute a program stored in memory 704 or receive and transmit data via I/O unit 706, or other similar function." (Specification p.13, lines 11-13). In light of this disclosure, one of ordinary skill in

Appl. No. 10/716,309
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PATENT

the art would be capable of creating a computer program product including computer program instructions embodying the invention for execution by a digital system and processing unit. Thus, the Applicants respectfully submit that claims 14-26 are fully enabled by the specification and respectfully request the withdrawal of this rejection.

The Examiner has also rejected claims 9 and 12 under 35 U.S.C. §112(2) as being indefinite. The Applicants have amended claims 9 and 12 accordingly and respectfully request withdrawal of these rejections.

III. Rejection of claims 1-26 under 35 U.S.C. §103(a).

The Examiner has rejected claims 1-26 under 35 U.S.C. §103(a) as being unpatentable over DiGiacomo et al., U.S. Patent No. 4,630,219 ("DiGiacomo"). As an initial matter, the Applicants respectfully submit that the Examiner has not established a prima facie case of obviousness.

To establish a prima facie case of obviousness, the Examiner must show that the cited references teach or suggest all the claim limitations, that there is some suggestion or motivation to modify the cited reference to teach the claim limitations, and that there is a reasonable expectation of success. (MPEP 2142). The Examiner has not satisfies the last two of these requirements.

With regard to the motivation to combine or modify the cited reference, the Examiner has not provided any indication of how DiGiacomo should be modified or augmented to match all of the elements of the claims. The Office Action does not state which elements of the claims are missing from DiGiacomo or what modifications to DiGiacomo are necessary to provide the elements of the claim. Additionally, the Examiner has not provided any explanation of how these modifications or additions to DiGiacomo, (whatever they may be), are suggested or motivated by the prior art. Thus, the Examiner has not shown any suggestion or motivation to modify the cited reference or how there would be any expectation of success resulting from these modifications.

Appl. No. 10/716,309
Amdt. dated March 6, 2006
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PATENT

Moreover, the Applicants respectfully submit that DiGiacomo, considered by itself and unmodified, does not disclose or suggest all of the elements of the cited claims. For example, claim 1, as amended, recites in part:

assigning each of the circuit elements to a separate abstract block, wherein . . . the abstract block represents a functional attribute of its assigned circuit element;
grouping each of the abstract blocks into a logic block based at least in part on a correspondence between a functional attribute of the logic block and the functional attribute of each abstract block;

The Applicants respectfully submit that DiGiacomo does not disclose or suggest at least this element of claim 1.

DiGiacomo discloses a method for "optimally assigning a plurality of different size elements to element positions in an array of element positions." (Col. 1:6-9). To this end, DiGiacomo discloses that first "all of the elements are treated as if they are the same size (defined as unit size), and optimum placement for the unit size placement is determined." (Col. 2:44-47). Next, DiGiacomo replaces the unit size elements with "macro size elements, which bear rough approximations to the actual element sizes." (Col. 2:50-53). "For macro modeling, each component's size is roughly proportional to its actual size." (Col. 3:33-35) Thus, according to DiGiacomo, macro size elements represent the rough approximation of the physical size of elements.

In contrast, claim 1 recites "assigning each of the circuit elements to a separate abstract block, wherein . . . the abstract block represents a functional attribute of its assigned circuit element." The abstract blocks represent functional, not physical, attributes of circuit elements.

Moreover, claim 1 recites "grouping each of the abstract blocks into a logic block based at least in part on a correspondence between a functional attribute of the logic block and the functional attribute of each abstract block." Abstract blocks are grouped to logic blocks based at least in part on a correspondence between functional attributes of the abstract block and logic block.

Appl. No. 10/716,309
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PATENT

In contrast, DiGiacomo does not consider the function of elements in determining their placement. For example, DiGiacomo states "the optimally placed unit size elements are replaced by macro size elements which bear rough approximations to the actual element sizes. The macro size elements are rearranged for optimal placement, taking their sizes and shapes into account." (Col. 2:50-54) (Emphasis Added).

Because DiGiacomo does not consider the function of elements in determining their placement, DiGiacomo does not disclose or suggest all of the elements of claim 1. Thus, the Applicants respectfully submit that claim 1 and its dependents are patentable over DiGiacomo for at least this reason.

Claim 14 recites elements similar to claim 1. Applicants respectfully submit that claim 14 and its dependents are patentable over DiGiacomo for similar reasons.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

The Applicants invite the Examiner to telephone the undersigned if the Examiner believes a telephone conference would expedite prosecution of this application.

Respectfully submitted,



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